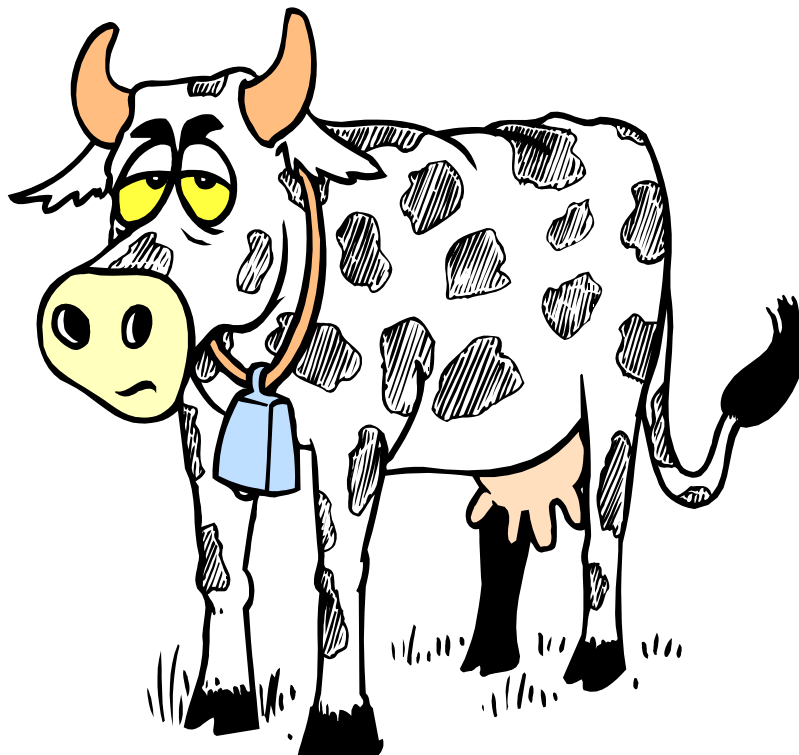




National Agricultural Library

All about Dairy Cows

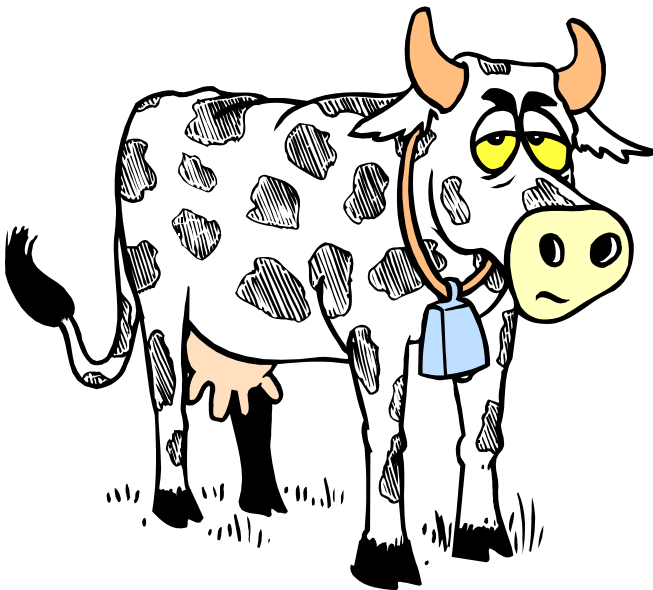
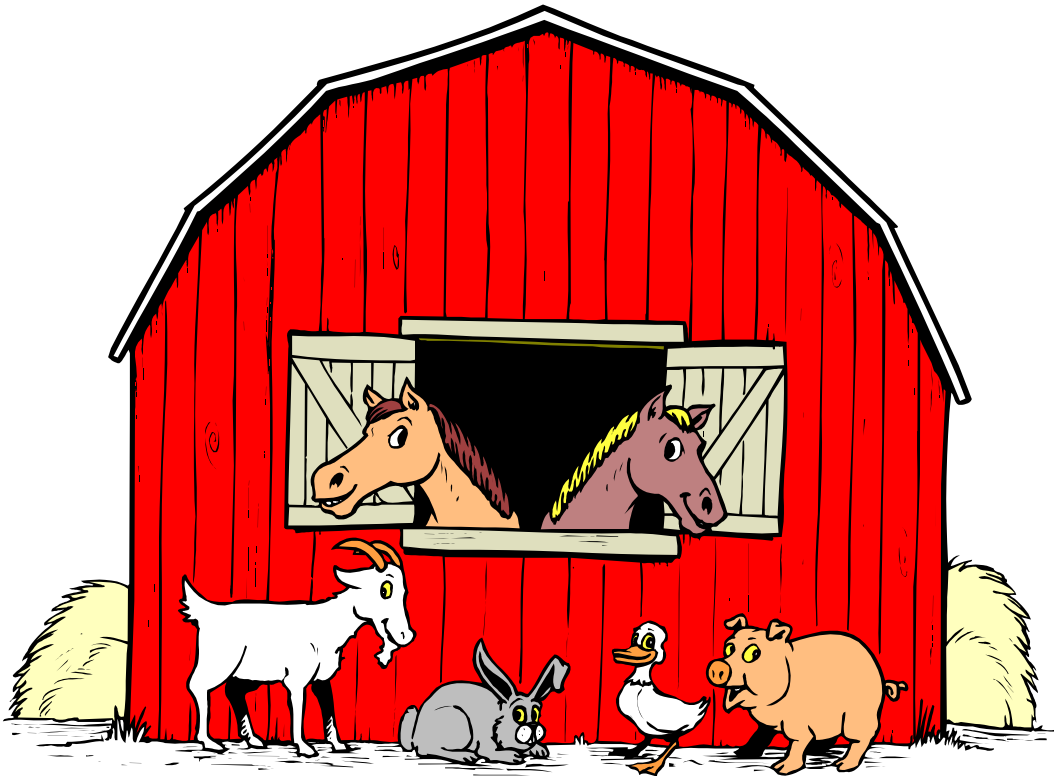


Grade Level: Middle School



US Department of Agriculture
Agricultural Research Service
National Agricultural Library

Who started dairy farming?



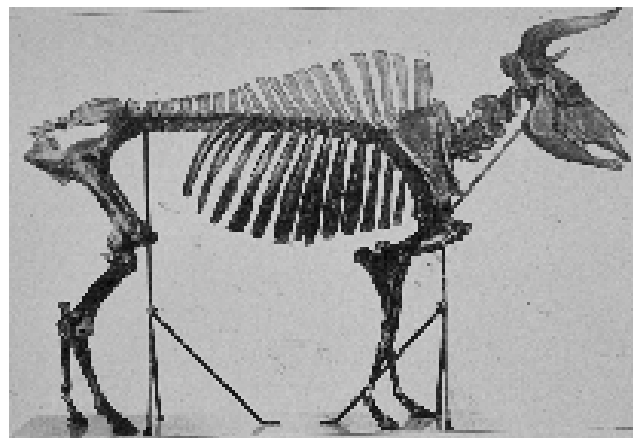
No one really knows how long ago people started milking cows, or how they discovered that milk was good for us to drink. All we know is that dairying is an ancient occupation. Some authorities date the domestication of cattle as early as 10,000 years ago, and others almost half that amount of time.

Modern domestic cattle evolved from a single early ancestor, the auroch. Prehistoric paintings help us to identify the appearance of the auroch..



Auroch

The species actually survived until relatively modern times. It is believed that the last surviving member of the species was killed by a poacher in 1627 on a hunting reserve near Warsaw, Poland. The species may have survived in small numbers in other parts of the world until a later date but there is no evidence to support this theory.



Auroch skeleton

Cows are not indigenous to America. Columbus brought cattle with him on his second voyage to the New World.

Due to the high loss of human life when the Pilgrims made their voyages, it became English law that each ship destined for the New World had to carry one cow for each five passengers. The ships's captain would then sell the cattle and that would bring the captain a little income.



However, this practice also introduced disease into our population. In 1843, a New Yorker by the name of Peter Dunn purchased a cow from a sea captain. The cow was infected with a disease called

Contagious Bovine Pleuropneumonia (CBPP).

That cow infected others and resulted in huge livestock losses in three major epidemics over a 40 year period. In fact, the reason the United States Department of Agriculture was formed (called the Bureau of Animal Industry or BAI at that time) was to combat and eradicate CBPP.



What kinds of cows produce milk?

The large, black and white Holstein is the most common milk producing cow. Other breeds include Guernseys, Jerseys, Brown Swiss, Ayrshires, and Milking Shorthorns.



Ayrshire



Guernsey



Jersey



Brown Swiss



Milking Shorthorn



Holstein

Activity: Cow Census

The next time you travel along a highway try to identify and count the dairy cows that you see.

Ayrshire: _____

Guernsey: _____

Jersey: _____

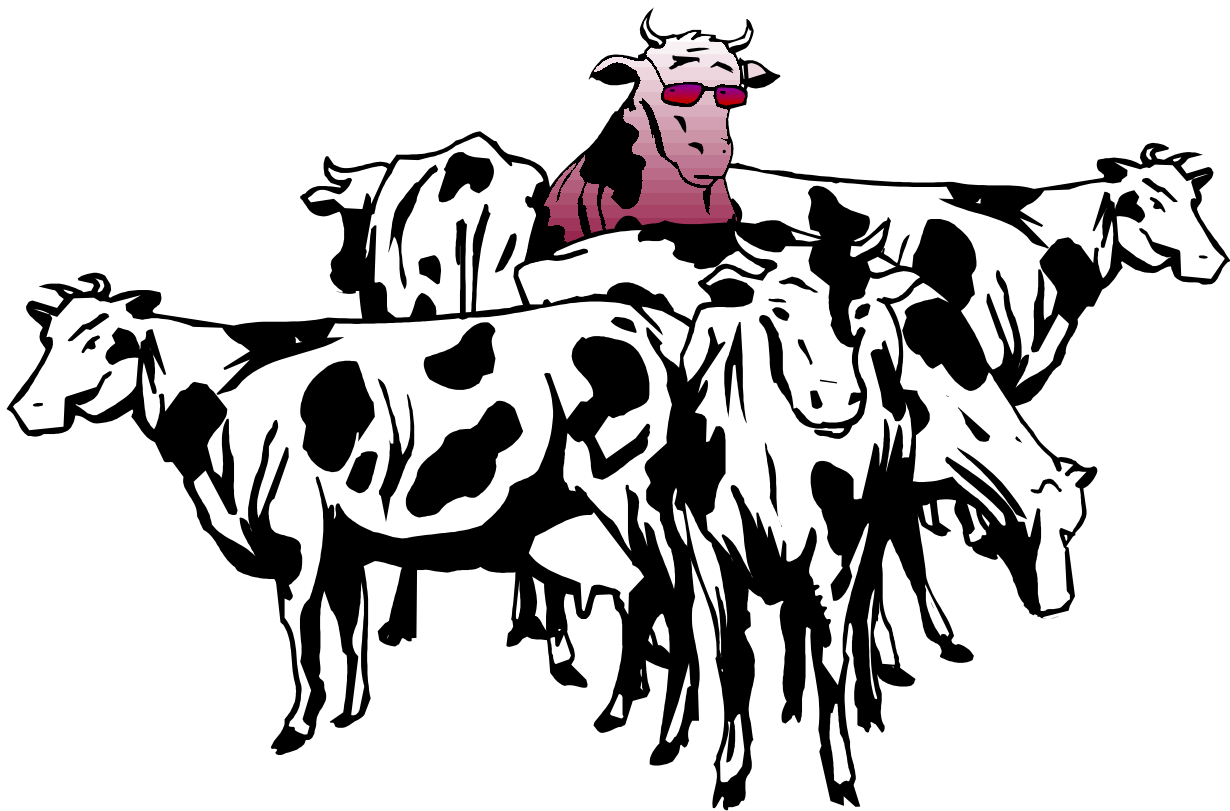
Brown Swiss: _____

Milking Shorthorn: _____

Holstein: _____

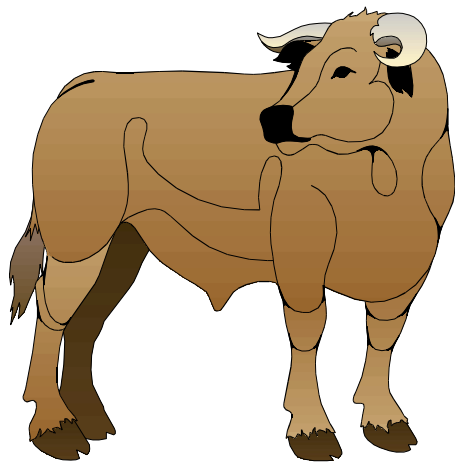
How can you tell Holstein cows apart?

A Holstein's spots are like a fingerprint or a snowflake. No two cows have exactly the same pattern of spots.

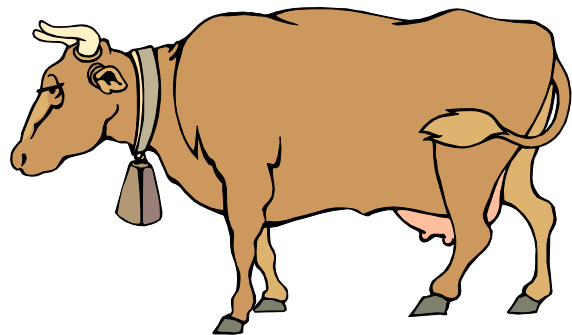


Cow Families

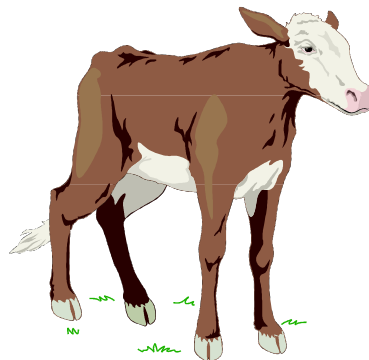
A female cow younger than 3 years old that has not had a baby is termed a heifer; a male cow is called a bull; and a castrated male is a steer. A dairy cow is a female that has given birth to a baby. That baby is called a calf.



Bull, if castrated Steer

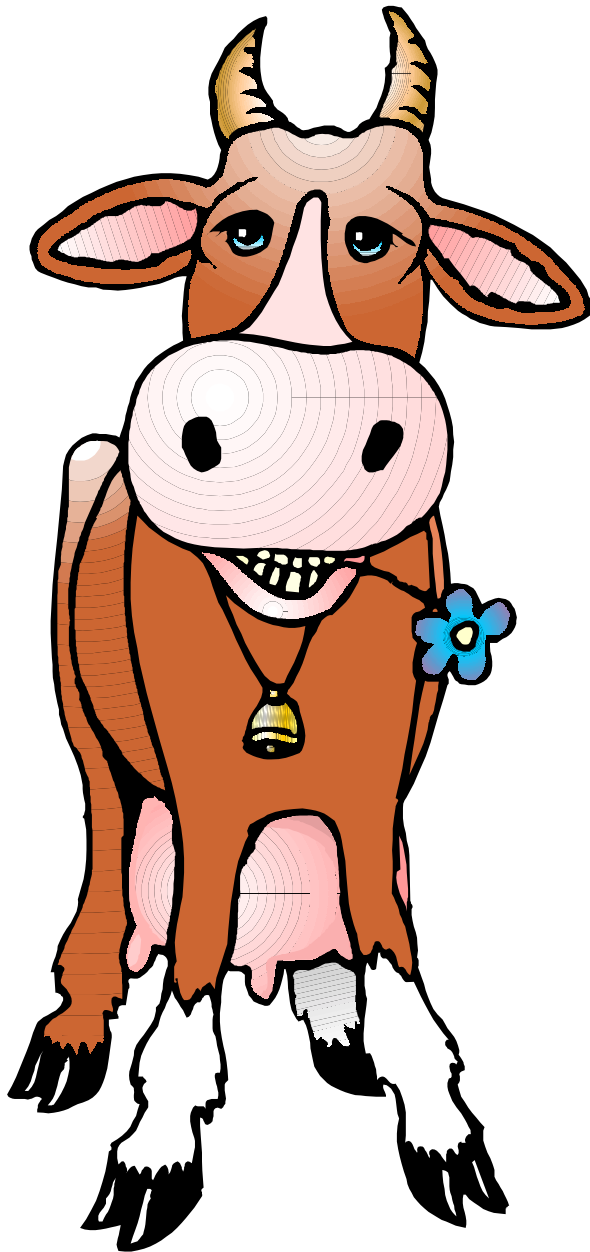


Dairy Cow



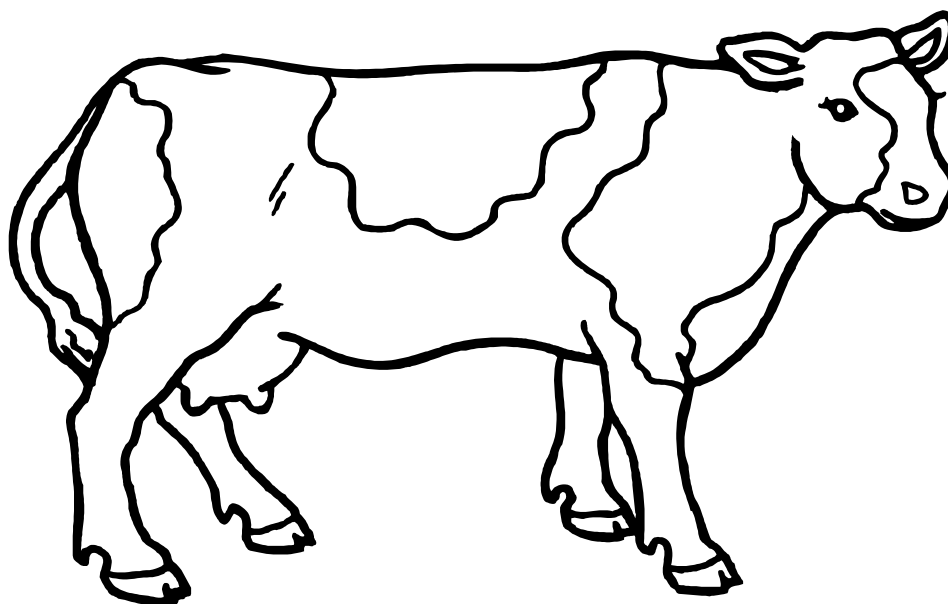
Calf

How much milk does a cow produce?



The average cow produces about 19,825 pounds of milk each year.

That's 2,305 gallons of milk a year or about 8 gallons of milk every day of her milking period. That's enough for 128 people to have a glass of milk every day!

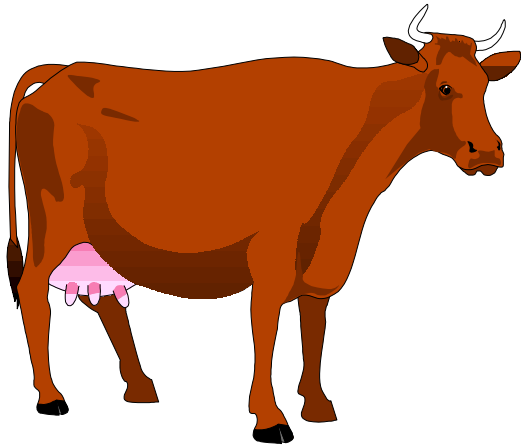


Each day the dairy cow can produce
up to:

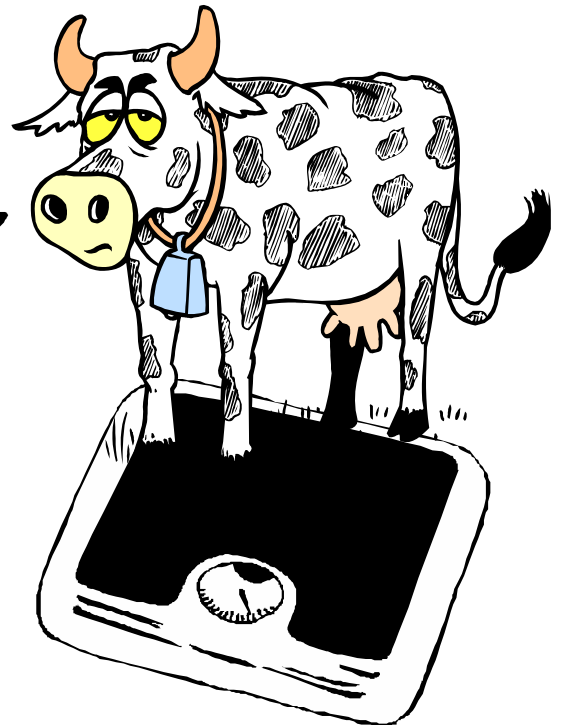
64 qts milk (256 glasses) or,
14 lbs cheese or,
5 gal ice cream or,
6 lbs butter

How much does a cow weigh?

When a Holstein cow is milking, she weighs between 1,100 and 1,500 pounds. A Jersey cow weighs between 700 and 1,000 pounds.



Oh no,
1,600 lbs!



What's all this about chewing cud?

Got cookies?

Cows chew their food slightly,
then swallow the food.

The food goes to the first stomach
then comes back into the mouth where they chew it more.

Cows have one stomach that
is divided into four parts.

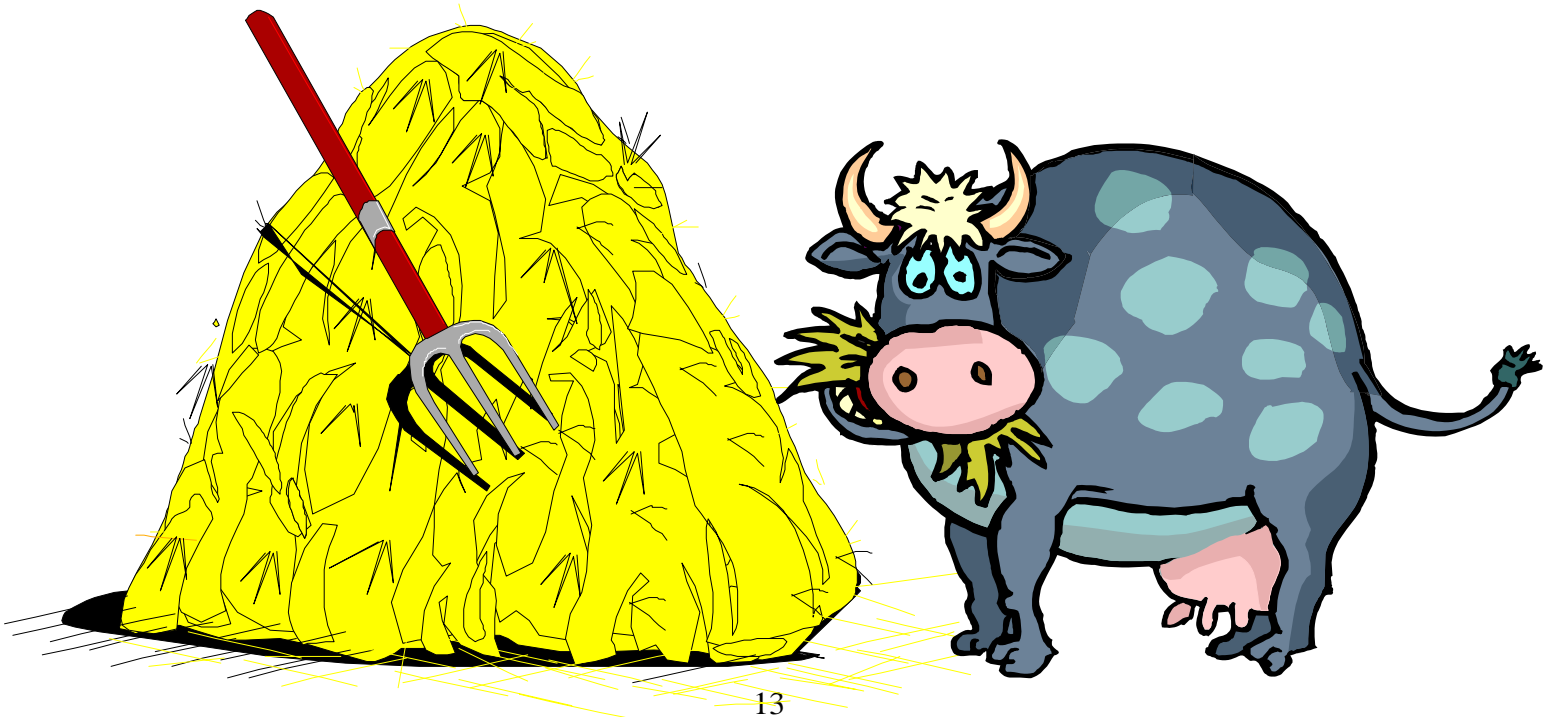
Cud chewing helps cows get
the most out of
difficult-to-digest foods like
grass.

Ruminants are even-toed
hoofed animals that
regurgitate their food and
chew cud. (Cows, sheep,
deer, giraffes and camels are
ruminants.)

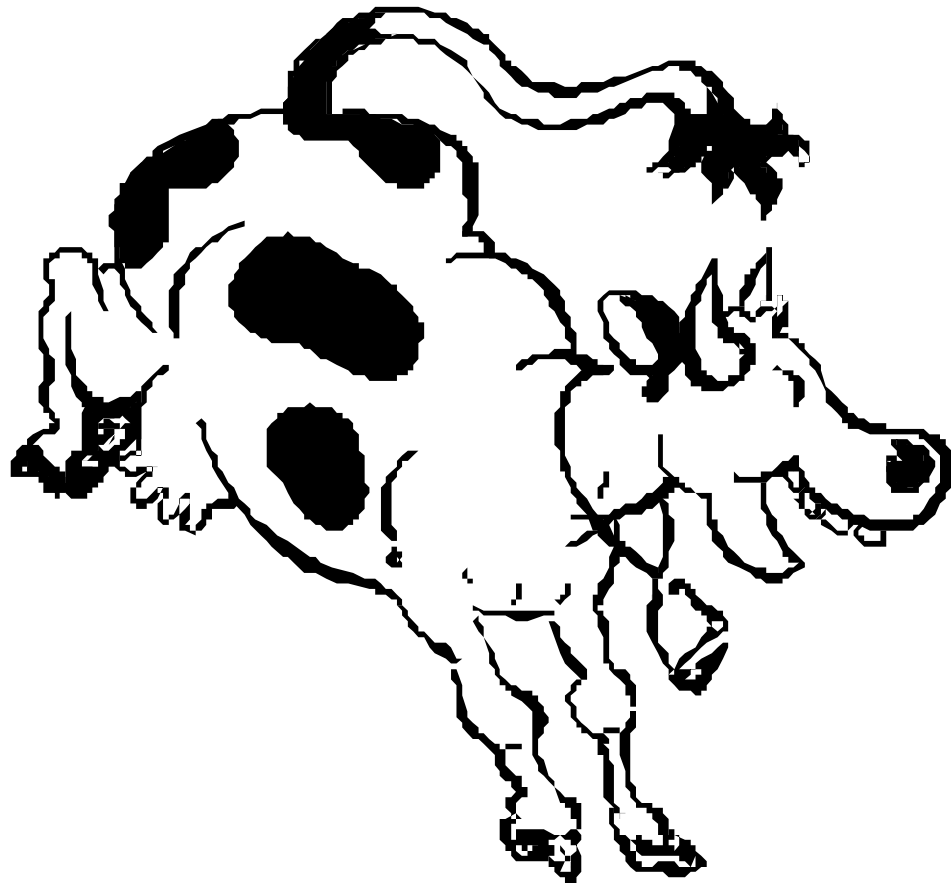


How much does a cow eat?

Cows are **BIG** eaters. A cow spends a lot of time eating B up to 8 hours per day. Cows eat 90 pounds of food a day! A cow that chows on only grass can make 50 glasses of milk a day. But one that eats grass, corn and hay can make 100 glasses of milk a day!

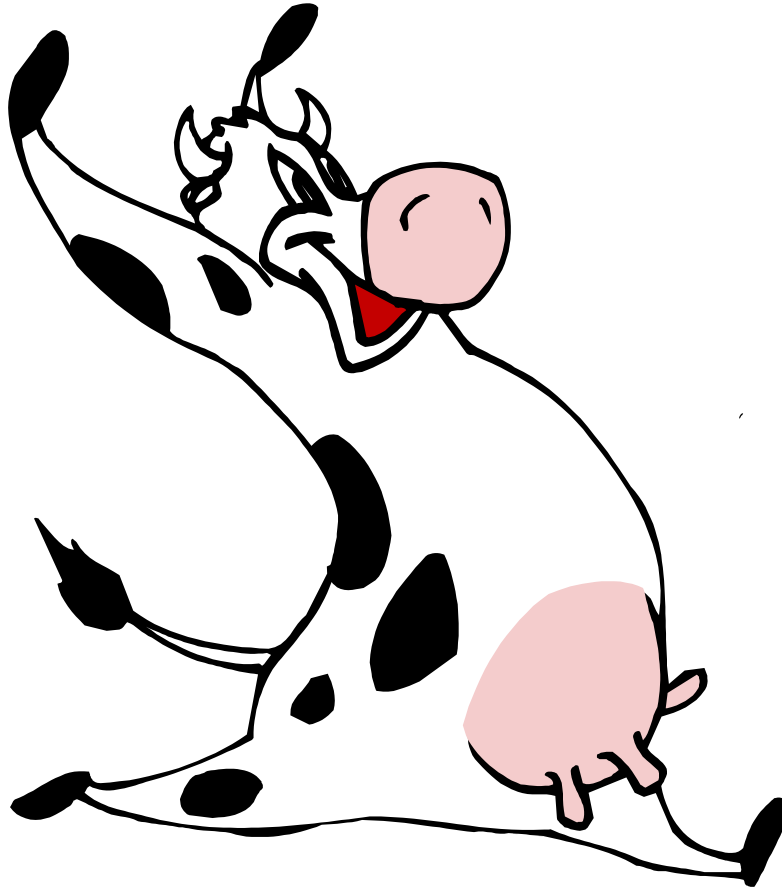


Do cows have special teeth for eating grass?



Cow's teeth are different from ours. On the top front, cows have a tough pad of skin instead of teeth. They have 8 incisors on the bottom front and 6 strong molars on the top and bottom of each side to grind their food. Cows have a total of 32 teeth.

How many stomachs does a cow have?

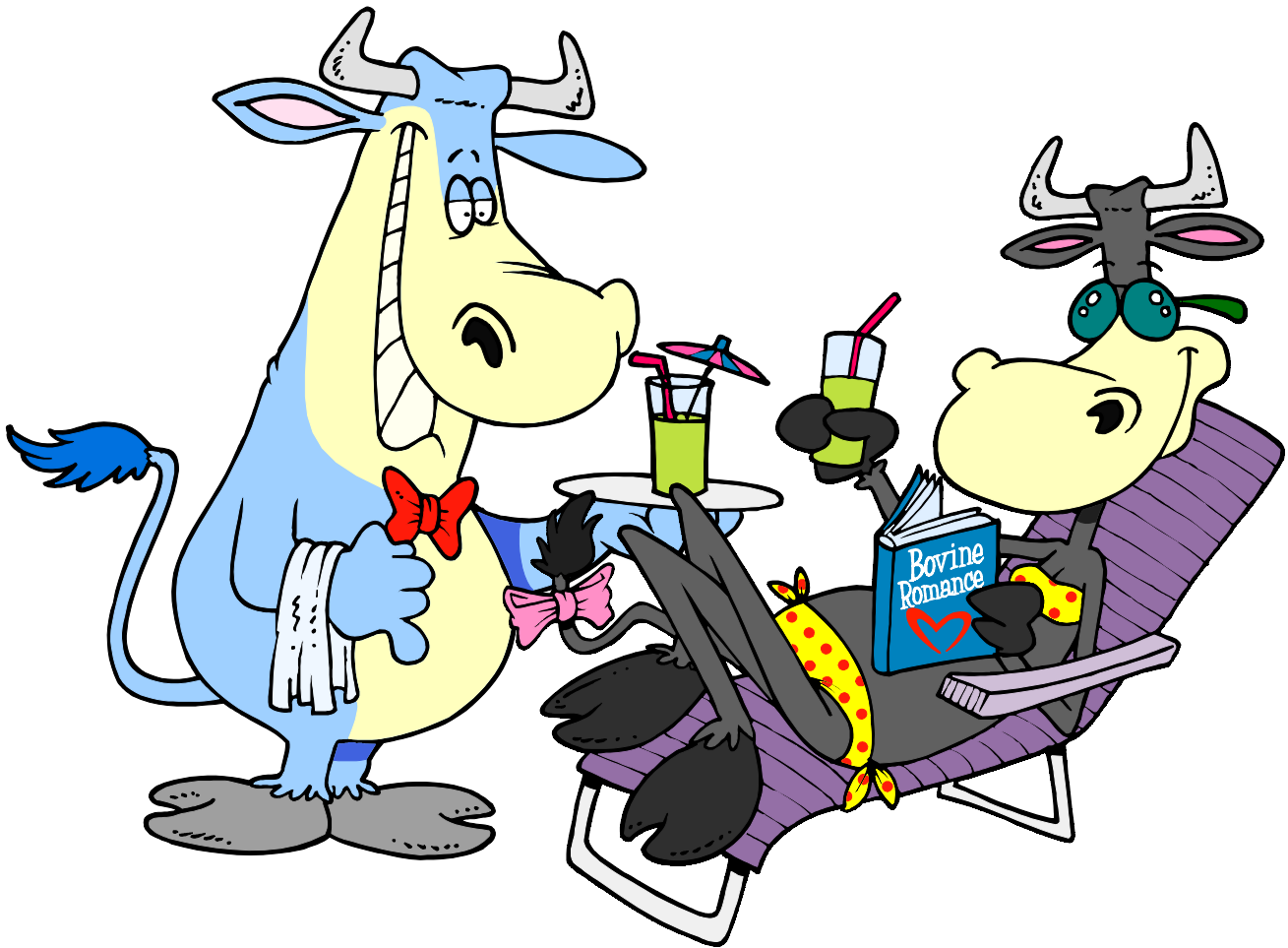


Some people say that a cow has four stomachs. Actually, a cow has one stomach with four chambers.

The chambers are called the rumen, reticulum, omasum, and abomasum.

For a cartoon illustration of the cow's stomach visit this Web address: <http://www.mteam.com/cow4.html#cow>.

How much water does a cow drink?



Cows drink 25-50 gallons of water each day. That's nearly a bathtub full.

Cartoon cows drink limeade.

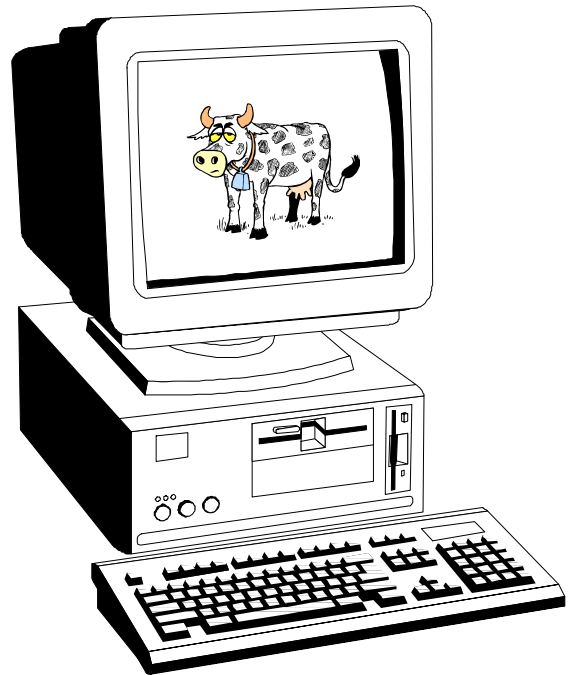
Why do some cows look like they have earrings?



Milk cows usually have their ears pierced with I.D. tags.

Each cow has a different number that allows the dairy farmer to track her activities by computer. The cow's milk weight is recorded in the computer as well as any medicines she receives.

Do you have pierced ears?



How do you say cow?



Spanish	=	vacca
Italian	=	vacca
Portugese	=	vaca
German	=	kuh
Dutch	=	koe
Esparanto	=	bov
French	=	vache
Japanese	=	ushi
Latin	=	bos, bovis
Finnish	=	lehmä
Swahili	=	gombe, ng'ombe
Vietnamese	=	danh tõ

Activity: Word Search

Circle the words from the list below.

Words may be forward, backward, up, down or on a diagonal.

C	U	D	C	H	E	W	I	N	G	B
B	C	B	P	P	K	L	K	H	V	C
N	B	F	E	L	T	T	A	C	D	C
Y	C	C	B	N	U	M	M	N	Y	N
E	C	O	W	K	D	C	V	E	V	H
S	K	L	L	K	D	H	S	G	G	B
R	A	I	A	N	E	N	V	D	E	K
E	M	W	D	O	R	U	B	O	O	K
J	X	F	S	E	F	N	O	T	I	E
A	C	P	U	Y	B	O	V	I	N	E
U	F	G	T	L	V	A	C	C	A	B
R	U	M	I	N	A	N	T	S	I	F
O	K	F	V	O	D	A	I	R	Y	D
C	J	H	Z	T	M	U	D	O	T	N
H	O	L	S	T	E	I	N	K	V	C

HOLSTEIN

DAIRY

CATTLE

GUERNSEY

JERSEY

MILK

CUD CHEWING

UDDER

USDA

BOVINE

RUMINANTS

AUROCHS

CBPP

VACCA

Word Search: Answers

C	U	D	C	H	E	W	I	N	G	
	C	B	P	P						
			E	L	T	T	A	C		
Y					U					Y
E	C	O	W	K	D			E		
S			L		D		S			
R		I	A		E	N				
E	M		D		R		B	O	O	K
J			S	E						
A			U		B	O	V	I	N	E
U		G			V	A	C	C	A	
R	U	M	I	N	A	N	T	S		
O					D	A	I	R	Y	
C										
H	O	L	S	T	E	I	N			

Milking Cows

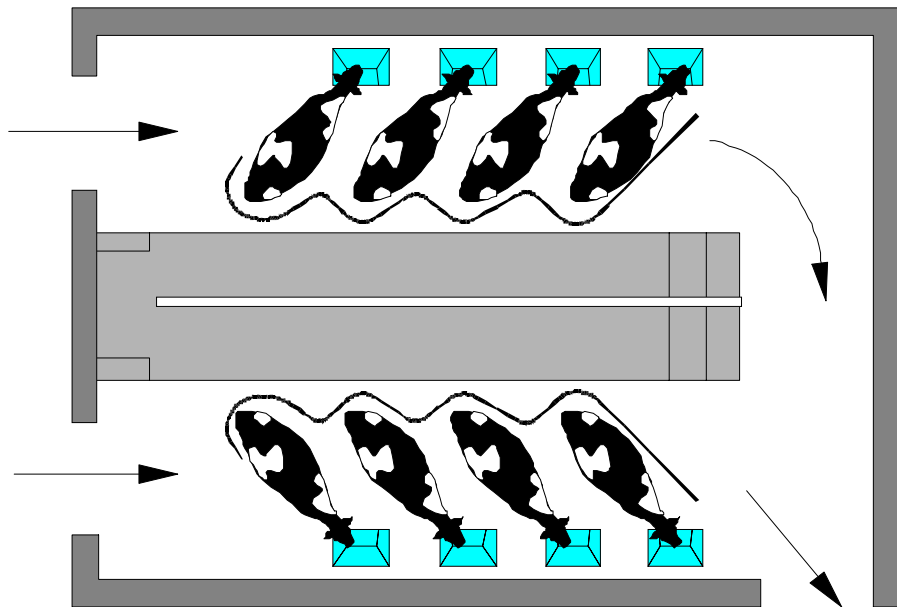
Cows have been called nature's own milk factory on four hooves. Before milking machines were invented (in 1894), farmers could only milk about six cows per hour (whew, that's hard work).

Today, farmers use machines to milk more than 100 cows per hour. Many farms also have computers to help track how much milk a cow makes.

Dutch engineers have developed a computerized machine that allows a cow to milk itself. Each cow in the herd has a computer chip in its collar. If the computer senses that the cow has not been milked in a given period of time, the milk-laden animal is allowed to enter the stall. The robot sensors locate the teats, apply the vacuum devices, and the cow is milked. The machine costs a mere \$250,000 and is said to boost milk production by 15%.

A cow's udder can hold 25-50 pounds of milk at a time -- no wonder she's so eager to be milked -- and a cow gives nearly 200,000 glasses of milk in her lifetime.

The milk of the cow is most widely used by humans, but the milk of the mare, goat, ewe, buffalo, camel, donkey, zebra, reindeer, llama, and yak is also used.



Cow Trivia and Useless facts

Mosquitos prefer cow blood to human blood.

The Moscow Circus has a troupe of dancing cows that dance to Russian music and play football.

Cows clean their noses with their tongues.

If a cow steps on your foot, and you can keep your calm, simply lean forward and the cow will move away. A cow is a gentle animal and probably doesn't know that it's on your foot.

Twelve or more cows are known as a "flink."

It is possible to lead a cow upstairs, but not downstairs.

Rennin, the enzyme obtained from the fourth stomach of a cow and used chiefly in the manufacture of cheese, is capable of coagulating more than 25,000 times its weight of fresh milk.

Abe Lincoln's mother died when the family dairy cow ate poisonous mushrooms and Ms. Lincoln drank the milk.

Most cows give more milk when they listen to music.

Every day the average person sees at least one thing relating to a cow (be it a poster, a cow type print, a picture or a real cow)

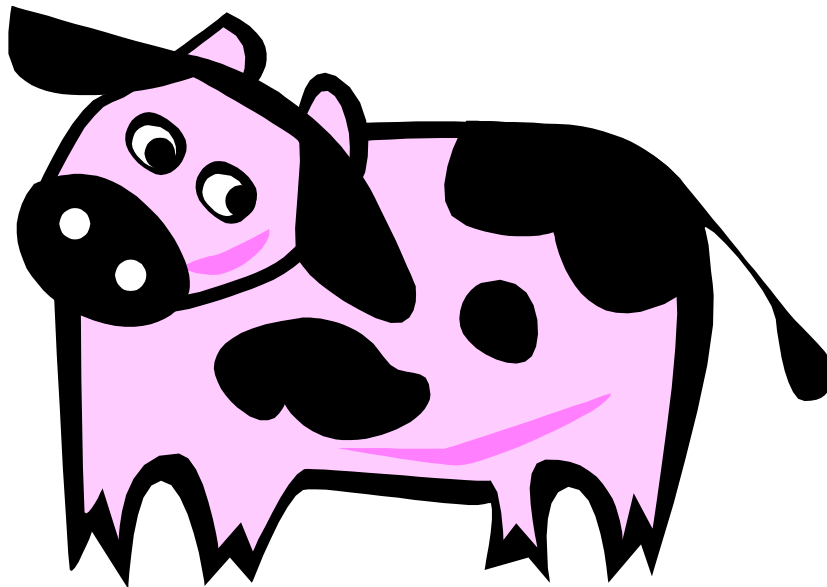
Rather than pay £50,000 (\$74,127.00) for bedding straw each year, a Surrey famer is having waterbeds made for his dairy herd. Alan Bristow, a millionaire farmer designed the beds himself and will make them commercially available next spring for about £130 (\$193.00). 'The cows love them. Given the choice of the beds or lying on the straw, they pick the waterbeds every time.'

Cows navigate by looking at the ground. If the field the cows are in is flooded, they are not able to find their way home !

Cows actually baby-sit for each other. Small calves are settled into the grassy pasture and while one or two cows stay nearby to baby-sit, the rest of the moms go off to graze. Then they rotate back to take their turn baby-sitting while the first 'sitters' have a turn at the grazing.

Yes or No

1. Cows spend up to 8 hours per day eating. ____Yes ____No
2. A cow has four stomachs. ____Yes ____No
3. Dairy cattle have a ancestor named aurochs. ____Yes ____No
4. USDA was formed to combat and eradicate cow disease ____Yes ____No
5. Can you tell Holstein cows apart? ____Yes ____No
6. A female cow is a bull. ____Yes ____No
7. The average cow can produce about 20,000 pounds of milk per year. ____Yes ____No
8. Cud chewing helps cows to digest their food. ____Yes ____No
9. Invitations have been mailed for the ruminant family reunion. Will the kangaroo receive one?
____Yes ____No
10. When Columbus arrived in America he found Native American dairy farmers.
____Yes ____No



Answers: Y,N,Y,Y,Y,N,Y,Y,N,N

Additional Information on Dairy Cattle

Lesson Plans

<http://www.inform.umd.edu/EdRes/Topic/AgrEnv/ndd/4h/>

<http://www.cyfernet.mes.umn.edu/>



Cows On the Web

Big Dave's Cow Page: <http://www.gl.umbc.edu/~dschmi1/links/cow.html>

Not Just Cows: <http://www.morrisville.edu/~drewwe/njc/>

Cow Facts: <http://www.gl.umbc.edu/~dschmi1/cows/facts.html>

Breeds of Livestock: <http://www.ansi.okstate.edu/BREEDS/cattle/>

Cows, Trivia and Facts: <http://www.funtrivia.com/Animals/Cows2.html>

Research into the Aurochs: <http://www.kte.nl/~vuure/oeros/oeros.html>

Types of dairy cows: <http://www.kenyon.edu/projects/farmschool/food/milkcowt.htm>

Resources from the AGRICOLA Database

AU: Burditt,-Larry.

CA: Oklahoma State University. Animal Science Dept.

TI: Breeds of livestock.

SO: [Stillwater, Okla.?] : Dept. of Animal Science, Oklahoma State University, [c1995]-

CN: DNAL SF105.B74-1995

LA: English

AU: McCay,-B.

TI: Continental cattle a century ago [Breeds, history].

SO: Ark. Stoneleigh Park, Kenilworth : Rare Breeds Survival Trust. July 15, 1984. v. 11 (7) p. 203-206. ill.

CN: DNAL SF105.A74

LA: English

Additional Cyber Resources

<http://www.usda.gov/news/usdakids/index.html>

All About Dairy Cows was created by
Deborah Y. Richardson

<http://www.nal.usda.gov>

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